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A WEST VIRGINIA ROCK-SHELTER.

BY W. H. HOLMES.

Through the representations of Mr. G. F. Queen, Mr. L. V. McWhorter, of West Virginia, was induced to open a correspondence with the Director of the Bureau of Ethnology in regard to an interesting cave or rock-shelter located in Harrison county, that State. The walls of this cave were said to be covered with pictographs, and the probability of securing material of importance to archæologic science seemed so great that I was instructed to visit the locality and make examinations. The journey was undertaken in September, 1889.

The geographical position of the site did not lead me to expect discoveries of unusual interest, as the region is remote from natural thoroughfares and separated by physical barriers from the favorite resorts of our ancient aborigines. A cave so situated could not be expected to contain evidences of long or extensive occupation, either by the mound-building nations of the west or by the tide-water tribes of the Atlantic coast. From a consideration of the conditions, I was led to expect precisely what, according to my own interpretation, was found—a medicine or prayer resort of the hunter tribes of comparatively recent times, probably of Algonkian or Iroquoian stock. The only surprise that awaited me was the discovery of such carefully elaborated and well preserved rock sculptures.

Locality.—In the southern part of Harrison county a small stream, known as Two-Lick creek, heading near the Little Kanawha divide, descends into the West Fork of the Monongahela at a point about four miles west of Lost Creek Station, on the Clarksburg and Weston railroad. Ascending the stream for a little more than two miles and turning to the right up a tributary about two miles in length, called Campbell's Run, we soon found ourselves facing, on the west side, a deep amphitheatre-like ravine or hollow, nestled in the narrow bottom of which are two farm cottages—the lower belonging to Mrs. Queen and the upper to Mr. Lawson. On the sloping hillside a few hundred feet above the house of the latter occurs the slight outcrop of sandstone beneath which is the shelter.

The Shelter.—A nearly horizontal stratum of massive carboniferous sandstone, in places exposed to a thickness of twenty feet or more, outcrops at various points around the lower slopes of the valley. At the shelter, some fifty feet above the stream bed, it is exposed to the thickness of ten or twelve feet and for a horizontal distance of perhaps thirty feet, with slight outcrops at the right and left. The slopes below and above are very steep, but are under cultivation nearly to the hill-tops, which are here 300 or 400 feet above the stream bed.

The recess in the rocks is the result of local surface undermining of the outcrop of sandstone assisted by roof degradation, and hence is a typical rock-shelter. At the opening it is about twenty feet long and in the deepest part extends back sixteen feet. The floor is nearly level, having recently been occupied by sheep, and a low, weed-covered ridge of débris, partly closing the chamber, extends along the outer edge beneath the eaves of the overhanging ledge. The opening is about four feet in height toward the left, but is much lower at the right. The uneven face of the shelving rock is from two to five feet thick, and the exposed upper surface is in places perhaps ten feet in width with the slope.

The roof of the shelter is unevenly arched and to the right of the center reaches a height of nearly six feet; toward the rear it curves downward into the concave back wall upon which the figures are engraved. The rock floor descends rapidly from the back wall and soon passes beneath the accumulated débris.

Petroglyphs.—The rock sculptures, of which simplified outlines are given in Fig. 1, occupy the greater part of the back wall of the recess, covering a space some twenty feet long by about four feet in height. At the left the line of figures approaches the outer face of the rock, but at the right it terminates in the depths of the chamber, beyond which the space is too low and uneven to be utilized. There are indications that engravings have existed above and below those shown in the sketch, but by exfoliation and falling of the roof and by disintegration and wear near the floor, traces of these are too indistinct to be followed.

If the animal figures, of which the picture is for the most part made up, represent the deities of those who engraved them—and this is the only tenable theory of their origin and execution—it is probable that one or more, pertaining to the upper regions, would

occupy the higher parts of the wall or the roof space overhead, and that one or more, belonging to the lower regions, would occur on the lower part of the available space. Be this as it may, it is probable that the figures now seen comprise the most important part of the original work.

The more legible designs comprise three heads, resembling death's heads, one human head or face, one obscure human figure, three birds resembling cranes or turkeys (one with outspread wings), three mountain lions or beasts of like character, two rattlesnakes, one turtle, one turtle-like figure with bird's head, parts of several unidentified creatures (one resembling a fish), and four conventional figures or devices resembling—one a hand, one a star, one the track of a horse, and the fourth the track of an elk, buffalo, deer, or domestic cow.

The serpents, placed above and toward the right of the picture, are much larger than life, but the other subjects are represented somewhat nearly natural size. The animal figure facing the two death's heads is drawn with considerable vigor and very decidedly suggests the panther. A notable feature is the two back-curving spines or spine-like tufts seen upon its shoulder; it is possible that these represent some mythical character of the creature. Two of the animal figures, in accordance with a wide-spread Indian practice, exhibit the heart and the life line, the latter connecting the heart with the mouth; these features are, as usual, drawn in red.

The human head or face is somewhat larger than life; it is neatly hollowed out to the nearly uniform depth of one-fourth of an inch, and is slightly polished over most of the surface. Ear lobes are seen at the right and left, and an arched line, possibly intended for a plume, rises from the left side of the head. A crescent-shaped band of red extends across the face, and within this the eyes are indistinctly marked. The mouth is encircled by a dark line and shows six teeth, the spaces between being filled in with red.

Probably the most remarkable members of the series are the three death's heads seen near the middle of the line. That they are intended to represent skulls and not the living face or head is clear, and the treatment is decidedly suggestive of that exhibited in similar work of the more cultured southern nations. The eye spaces are large and deep, the cheek-bones project, the nose is depressed, and the mouth is a mere node depressed in the center.

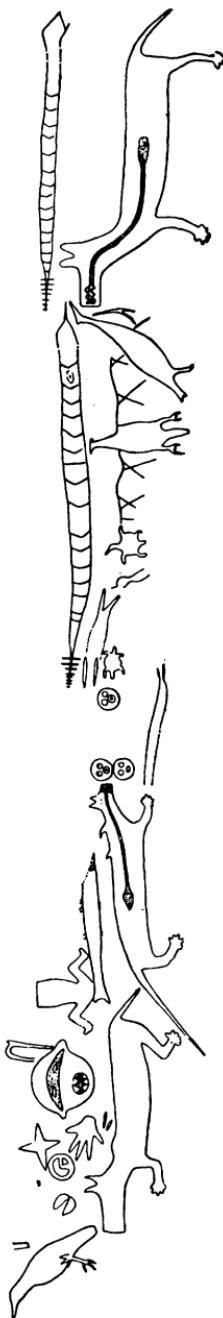


Fig. 1.—Outlines of petroglyphs, about one-thirtieth-sixth actual size. Red areas are dotted.

Exterior figures.—A few figures appear upon the exterior face and upper surface of the overhanging rock, and it is quite possible that others still have been obliterated by weathering. There are now but two sufficiently distinct to be made out; both are human figures. The one on the right represents a personage life size, with arms and legs extended to the right and left. The work is identical in character with that upon the interior of the chamber. The other figure, on the face of the rock above the left-hand side of the opening, is smaller and is about one-half obliterated.

Execution.—All the figures are clearly and deeply engraved and all save the serpents are in full intaglio, being excavated over the entire space within the outlines and to the depth of from one-eighth to one-fourth of an inch. The serpents are outlined in deep unsteady lines, ranging from one-fourth of an inch to one inch in width, and in parts are as much as one-half an inch in depth. The example at the left is rather carefully executed, but the other is very rude. I have omitted from the drawing a wing-like feature which forms a partial arch over the larger serpent. It consists of a broad line of irregular pick-marks which are rather new-looking and may not have formed a part of the original design; aside from this, there are few indications of the use of hard or sharp tools, and, although picking or striking must have been resorted to in excavating the figures, the lines and surfaces were evidently finished by rubbing. The friable character of the course soft sandstone makes excavation by rubbing quite easy, and at the same time renders it impossible to produce any considerable degree of polish. The rude

rounded stones obtained from the floor deposits of the shelter were undoubtedly employed in this work. The largest of these resemble ordinary hammer stones in size and shape. In several cases they have small pits in the sides, making it possible to grasp them firmly for striking. They were made from material indigenous to the locality—a rather soft coarse sandstone, like that of the stratum forming the shelter. The salient edges are rounded by use.

The red color used upon the large face and in delineating the life line and heart of the animal figures is a red ochre or hematite, bits of which, exhibiting the effects of rubbing, were found in the floor deposits of the recess. The exact manner of its application is not known—perhaps the mere rubbing was sufficient—but the color is so fixed that it cannot be removed save by the removal of the rock surface. There are indications that this color was employed in many parts of the work, now much changed by the ravages of time.

Excavations and Relics.—The mouth of the shelter was partially closed by a ridge of débris fallen from above. Inside of this the floor space, some twenty feet long by fourteen deep, was level, save for the presence of small masses of rock detached from the roof. In order to disclose the character of the contents of the ridge of débris, it was trenched transversely, beginning at the exterior base. The excavation was also carried across the floor of the shelter. Evidences of occupation by men and animals were confined exclusively to a thin surface deposit of dark earth, which contains ashes, bones, charcoal, and numerous small articles of artificial origin. The exterior ridge, as well as the substrata of the floor, were composed of half-disintegrated masses of sandstone that had fallen from above. The deposits containing artificial relics were in no place over a foot in depth and varied in thickness, as a result of the uneven surface upon which they were laid down. I expected to find near the center of the recess evidence of a fire-place, and a bed of ashes was found to the right of the middle point, under the apex of the roof. This bed of wood ashes, quite pure and but slightly compacted, rested upon the undisturbed rock floor and was from two to three feet in horizontal extent and in the central part about six inches deep. A row of flat stones had been laid along the lower side of the fire-place. The deposit of dark soil covered the ashes to the depth of a few inches. Scattered sparingly through the ashes and more plentifully through the surrounding earth were bits of bone, flint, and earthenware, with arrow-points, hammer or rubbing stones, and unio

shells. There was no well-defined stratification and no indications whatever of separate periods of occupation.

Pottery.—That the shelter was not a place of general or frequent resort or one at all employed for domestic purpose is sufficiently attested by the scarcity of remains of culinary articles. The earthenware recovered consists of about a dozen small fragments of pottery, found for the most part near the surface. The largest piece, obtained at a depth of six inches, is two inches in length and one-half an inch thick. The other fragments are not so thick, and do not average three-fourths of an inch in length. The material is clay, with a large percentage of tempering ingredients. A few pieces, including the large specimen mentioned above, are tempered with sand and bits of broken rock and break with an extremely jagged fracture; the others contain an excessive quantity of pulverized shell. The vessels represented, probably three or four in number, have apparently been rude, wide-mouthed pots. The surfaces are uneven and the exterior is finished in most cases with textile imprints, such as result from striking the soft clay with cord-covered paddles. This ware corresponds closely with the rude forms of aboriginal work found both east and west of the Appalachian highland.

Arrow Points, etc.—A few arrow-points of flint and quartz, and of usual shapes, were found distributed throughout the floor deposits. A number of small flakes of flint and bits of rock brought in by the occupants were noticed.

Red Hematite Paint Stones.—Taken in connection with the occurrence of red pigment in the wall sculptures, the finding of numerous small bits of red chalk or hematite are interesting. Some of the pieces, none of which are over an inch in greatest dimension, show artificially polished surfaces, the result, no doubt, of use in coloring the picture.

Hammer and Rubbing Stones.—In looking for traces of the tools with which the engravings were made, nothing was found save the rude fragments of partially rounded, and in some cases pitted, sand-stone previously mentioned. They occurred throughout the artificial deposits of the cave. Owing to the loosely compacted texture of the walls of the recess, these tools were probably fairly well fitted for the work of reducing the broader surfaces of the designs. In incising the narrower lines and indentations sharper and harder implements must have been employed.

Bone and Shell.—Scattered throughout the soil and ashes were numerous small fragments of the bones of birds and small quadru-

peds. One piece showed evidence of artificial modification ; this was a spatula-like bit of rib, from one-half to three-fourths of an inch in width and some four inches long, which had been smoothed on the concave side and sharpened at the edges. Valves of *unio* shells were found in considerable numbers. They are apparently of the species found in the neighboring streams.

Tribes Concerned.—The distinctive characteristics of the pictographic work left by our historic tribes are not sufficiently well known to be of use in this case in identifying the people concerned in the execution of these figures, but numerous analogies with Algonkian work are apparent. That the work is comparatively recent is evident from its fresh appearance, the condition and contents of the shelter floor, and the correspondence of the art relics with those of well-known historic peoples.

Conclusion.—Inquiry into the origin and purpose of these sculptures may be made. The first thought of the inquirer naturally is, that here is a primitive record that may possibly be read. This view is supported by the fact that a large body of similar work found throughout the country is intended to record statements or ideas. In this case, however, I incline to the view that there is nothing recorded to be read, that the figures were intended for no practical purpose, but owe their existence to the demands of superstition. It is reasonable to suppose that inscriptions designed to be read would be so placed as to meet the eye of others than those who made them. These works are hidden in a mountain cave, and even now, when the forest is cleared away and the surrounding slopes are under cultivation,—this secluded recess is invisible from almost every side. The spot was evidently the resort of a chosen few. Such sequestered art has and always had a mystic office, and is ordinarily the work of the god-consulting anchorite or priest who hides away from the world to pray, to consult oracles, and to acquire prophetic powers. I infer that we have here, realized to the eye by sculpture and painting, the gods of the hunter priesthood, that the humble rock-shelter is an incipient pantheon of which the sculpture-enriched temples of Greece are the perfected type and the monotheistic cathedrals of to-day the most highly developed representatives.

Although many of our aboriginal races are known to have devoted much time and care to the delineation of personal and clan totems, it seems to me that no other than the deep and lasting motives connected directly with religion would be equal to the production of such elaborate and otherwise useless works.

RECENT WORK IN THE QUARRY WORKSHOPS OF THE DISTRICT OF COLUMBIA.—Excavation on the site of the stone implement workshops on Piny Branch was resumed as soon as the weather permitted this spring. Up to date five new trenches have been opened acrosss, or partly across, the old quarries in the plateau face. No new varieties of implements or worked stones have been found, but much has been learned in regard to the character and extent of the ancient quarrying, and additional light has been thrown upon the processes of manufacture.

One quarry face, encountered in the first trench dug, was ten feet in height, and when deserted by the ancient workmen must have presented a vertical or overhanging face at least twenty feet high.

In many places there are evidences of undermining, and the fact is developed that the operations of the ancient miners were rendered comparatively easy by their method of procedure. With ordinary stakes of wood burned to a blunt point it was not difficult to remove the disintegrated gneiss upon which the compact boulder bed rested, and then it was a comparatively easy matter to loosen and knock down the bowlders. The stone implements were not shaped in the pits. The bowlders were tested for texture and homogeneity by knocking of a flake or two, and if the result was satisfactory they were thrown to the surface to be roughed out and trimmed upon convenient spots around the margins of the pits or on level areas about the edge of the promontory.

The magnitude of the work is truly marvelous and exceeds the estimates made last fall.

Little evidence of a definite nature bearing upon the question of age has been secured. A hundred or a thousand years may have passed since the discontinuance of work upon this site. The ancient pits, dug in comparatively loose material, may have filled up in a few years, but no one can say that ages have not been consumed in reducing the art-bearing gravels of the slopes to their present condition. As previously shown, these gravels tell no story of time; they have been deposited uniformly throughout a period extending back from the present to a remote but undefined past. River gravels representing progressive erosion are not found in the Potomac valley, and as a consequence questions of age must be settled elsewhere. In the Delaware valley all the necessary elements of a time record exist, and there the record has been at least partly read. Rudely shaped tools have been found in gravels

dating back to, or nearly to, the glacial epoch. If these objects were buried in the gravels as the latter were laid down and are not upon the sites of more recent quarrying in these gravels, their great antiquity is clearly proved. It remains now to develop this point in the fullest manner, and then, if the interpretations of Doctor Abbott are shown to be correct, it will be necessary to seek the quarries and workshops that must exist somewhere in the valley above Trenton. If these are found and exhibit phenomena corresponding closely with those observed in the valley of the Potomac, a strong presumption will be created that the conditions are uniform in the two valleys, that the gravels presumed to exist here beneath tide-water contain the relics of prehistoric stone art, as surmised by Professor McGee, and that the work is very ancient.

No matter, however, how strong such a presumption may be, it cannot without additional verification amount to a demonstration. Similar work may have been done by different peoples and in widely separated periods of time. We know that there were populous fishing communities in the valley of the Potomac not 300 years ago, and that fishing was carried on by means of spears. The probabilities are that stone points were used for these spears. The general use of such points implies extensive manufacture and extensive quarrying of the material employed, and the existence of the great quarry-shop sites recently examined may thus be sufficiently explained without resort to the theory of a paleolithic man.

Operations on the Piny Branch site are nearly concluded, and another site on the west side of Rock creek near the new Observatory will next receive attention.

W. H. HOLMES.

ETHNOLOGY OF WEST AFRICA.—Captain L.-G. Binger's communication entitled "Du Niger au Golfe de Guinée par Kong" to the Société de Géographie, of Paris, published in its Bulletin for the third trimestre, 1889, gives a list of the tribes and linguistic families found by him in that heretofore unexplored region. His primary division is into seven ethnic families. Their names and those of their subdivisions are as follows, the French iteration being retained :

1st. The Mandé family (Mandingue, Bambara-Malinké, etc.), which stocks with inhabitants the states of Sámory, of Kong, parts

of Ouorodougou, of Kouroudougou, of Diammara, of Goudjâ, and which has its colonies nearly all over the district. This is eminently the encroaching race.

2d. The Siene-ré or Siénou-fo group, which constitutes the population of the states of Tiéba, Pegué, Follona, Djimini, and a part of Ouorodougou.

3d. The Gouroun-ga group, which inhabits Gourounsi and a part of Boussang-si.

4th. The Mo group, which inhabits Mossi and which seems to have relationship with the Bimba (gourma) group.

5th. The Haoussa-dogomba-mampourga group.

6th. The Peul family, which is situated north of the regions which Captain Binger visited, towards Djenné and Macina. Only a few colonies from there have succeeded in establishing themselves in the zone visited, and have not descended south of the eleventh degree of latitude.

Besides these seven great families, other peoples were met and less completely studied, which will be treated of more at length in a future work. Their names are as follows :

Tagoua, Samokho, Tourouga, Tousia, Mboin Keréboro, Pallaga, Tago-Komono-Dokhosie, Tiéfo, Bobofing, Bobo-Oulé, Bobo-Dioula, Léna, Dafina, Ménégue, Sommo, Kiparsi, Nonouma, Oulé, Dagari, Dagabakha, Bougouri, Lobi, Gâne, Diane, Lakhama, Lâma, Youlsi, Tiensi, Nokhorissé, Tansi, Mampourga, Dagomba, Goudja, Achanti, Ligouy-Diammoura, Ton, Pakhalla, Agni, Fallafalla, Kippirri, Kourou, etc., etc.

To this list the people of the lagune of Grand-Bassam must be added. An ethnographic map is furnished with the communication.

There are altogether more than sixty peoples among whom ties of relationship are apparent, but who speak a number of different languages and dialects. Fortunately the Mandé and the Haoussa are eminently commercial and are to be found throughout the district, so that with some knowledge of their languages and of Arabic travelling is possible.

GARRICK MALLERY.